Applicant | Facility ID / Permit #

Tennessee Department of General Services | **19-0114-02/970454P**

Emergency Engine > 560 kW power output (appoximately > 751.1 HP)

Power output	985.0	HP	(max **1,898** HP to be insignificant, max **2407.5** HP to stay under 10 tpy for fees, max **3000** HP for 40 CFR 89.112 applicability)
conversion	0.7457	kW/HP	AP42, appendix A
Power output	734.5	kW	
Heating value	137,000	Btu/gal	AP42, appendix A
BSFC	7,000	Btu/HP-hr	average brake-specific fuel consumption (BSFC), AP42, Table 3.3-1
Heat input	6,895,000	Btu/hr	
Fuel use rate	50.328	gal/hr	

(2007+ model year)

Allowable emissions, Tier 2, 40 CFR 89.112

Pollutant	Standard (gm/kW-hr)	Emissions (gm/hr)	Emissions (lb/hr)	Emissions (tpy)
PM	0.2	146.9029	**0.32**	**0.08**
NMHC + NOx	6.4	4700.8928	**10.36**	**2.59**
CO	3.5	2570.80075	**5.67**	**1.42**

1 lb = 453.592 gm

General equation: Emissions (gm/hr) = Standard (gm/kW-hr) * Power output (kW)
Convert to lb/hr: Emissions (lb/hr) = Emissions (gm/hr) * Conversion factor (1 lb/453.592 gm)
Annual PTE: Emissions (tons/yr) = Emissions (lb/hr) * Conversion factor (1 ton/2000 lb) * Operating time (500 hr/yr)

For SO_2, 15 ppm maximum sulfur content of fuel. Assume all sulfur converted to SO_2

Every mole of sulfur will create one mole of sulfur dioxide

$$S + O_2 \text{ ---> } SO_2$$

fuel use rate (gal)	7.05 lb	15 lb S	mol S	mol SO_2	64.066 lb SO_2	0.0106338	lb/hr SO_2
hr	gal	10^5 lb fuel	32.065 lb S	mol S	mol SO_2		
	density	from NSPS	l sulfur converted to SO_2				